

CLAIMS

We claim as our invention:

(1) A connector, comprising:

a connector member that is removably connected to an electric unit contained in a housing; and

a plurality of electric connection pins which support said connector member over a housing side member with a space therebetween, which have resilient portions in their middle portion, and which form respective terminals of said connector member at one end and are connected to respective terminals of the housing side member at the other end.

(2) The connector according to Claim 1, wherein the housing side member is a printed circuit board fixed to the housing.

(3) A connector, comprising:

a first connector portion removably connected to an electric unit;

a second connector portion;

a resilient member which supports said first connector portion over said second connector portion with a space therebetween; and

a plurality of electrical connection pins which have middle portions for allowing

relative displacement of said first and said second connector portions and respectively form terminals of said first and second connector portions at either ends.

(4) The connector according to Claim 3, wherein the middle portion of said electric connection pin is a resilient deformed portion serving also as said resilient member.

(5) The connector according to Claim 4, wherein said electric connection pin is composed of a metal plate, the metal plate has a curved portion bent in a thickness direction, and the curved portion serves as a resilient deformed portion.

(6) The connector according to Claim 5, wherein each of said first and second connector portions has a plurality of terminals arranged in two rows, said first connector portion has the terminals in one row and the terminals in the other row aligned in a column direction, and said second connector portion has terminals in one row and the terminals in the other rows displaced from each other in a column direction by about a half pitch, where a distance between two terminals in each row is defined as one pitch,

wherein said electric connection pins include first electric connection pins which form the terminals in one row of said first connector portion and the terminals in one row of said second connector portion and second electric connection pins which form the terminals in the other row of said first connector portion and the terminals in the other row of said second connector portion, and

wherein the middle portions of said first and second electric connection pins are displaced with respect to the positions of the terminals of said first connector

portion by about a quarter of the pitch in the opposite directions along the rows of the terminals.

(7) The connector according to Claim 6, wherein the curved portion of said first electric connection pin and the curved portion of said second electric connection pin are displaced from each other in a direction in which the electric unit is removably attached to said first connector portion.

(8) The connector according to Claim 3, further comprising:
a guide axis that extends in a direction in which said first connector portion faces said second connector portion, is fixed to said second connector portion and guides said first connector portion in a direction of extension thereof in such a manner that the first connector portion is capable of being displaced with respect to the guide axis.

(9) The connector according to Claim 8, wherein said guide axis has an end part which protrudes from said first connector portion and fits into a predetermined hole in a guide rail, which end part guides the electric unit toward said first connector portion to position the guide rail and said first connector portion.

(10) The connector according to Claim 8, wherein said guide axis has an end part which protrudes from said first connector portion and fits into a predetermined groove in a guide rail, which end part guides the electric unit toward said first connector portion to position the guide rail and said first connector portion.

(11) The connector according to Claim 3, wherein the electric unit is a hard disk unit disposed in the housing shared with said connector unit.

(12) The connector according to Claim 11, wherein the hard disk unit is one that is removably installed in a portable computer, and said second connector portion is a printed circuit board fixed in the housing of the portable computer.